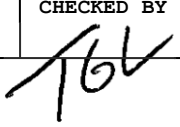


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P/C

COMPANY NAME AND ADDRESS

Quemetco, Inc. ID 8547  
720 South Seventh Avenue  
City of Industry, CA 91746 mailing and equipment address

EQUIPMENT DESCRIPTION

APPLICATION NO. 518048

AIR POLLUTION CONTROL SYSTEM CONSISTING OF:

1. BAGHOUSE, DONALDSON TORIT, MODEL 5 X 121FTP8, FIVE COMPARTMENTS, WITH 605 PTFE MEMBRANE FILTER BAGS, EACH 0'-5.875"DIA. X 8'-0"L, PULSE JET CLEANED.
2. EXHAUST SYSTEM WITH A 200-H.P. BLOWER VENTING SEVEN LEAD MELTING AND REFINING FURNACES.

APPLICATION NO. 518049

RECLAIM/TV FACILITY PERMIT REVISION

APPLICATION NO. 524239 (Previous A/N's 509241, 456811)

ALTERATION TO THE WET ELECTROSTATIC PRECIPITATOR AIR POLLUTION CONTROL SYSTEM OF A/N 509241 BY

A. DELETION OF THE VENTING OF:

1. BAGHOUSE, DRACCO, MODEL SS-2-100, FOUR COMPARTMENTS, WITH 1140 PTFE MEMBRANE FILTER BAGS, EACH 0'-5"DIA. X 9'-0"L.
2. EXHAUST SYSTEM WITH A 184-H.P. BLOWER VENTING SEVEN LEAD MELTING AND REFINING FURNACES.

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APPLICATION NO. 524239 (Previous A/N's 509241, **456811**)

(cont.)

**B. ADDITION OF THE VENTING OF:**

1. BAGHOUSE, DONALDSON TORIT, MODEL 5 X 121FTP8, FIVE COMPARTMENTS, WITH 605 PTFE MEMBRANE FILTER BAGS, EACH 0'-5.875"DIA. X 8'-0"L, PULSE JET CLEANED.
2. EXHAUST SYSTEM WITH A 200-H.P. BLOWER VENTING SEVEN LEAD MELTING AND REFINING FURNACES.

**HISTORY**

Application Nos. 518048 and 518049 were received on 1/12/2011 to remove and replace the refinery baghouse with a new model. A/N 524239 was received on 06/21/2011 to add the venting of the refinery pot baghouse to the Wet Electrostatic Precipitator System (WESP).

The following table provides relevant permit application history for the refinery baghouse.

<b>REFINERY BAGHOUSE</b>	
<b>518048</b>	<b>Received 1/12/2011 to install baghouse replacement.</b>
456816	Received 5-9-2006 to remove exhaust stack and vent baghouse outlet to WESP APCS, P/C issued in section H on 4-19-2007
378135	Received 12/21/2000, P/C issued 05/24/2001, A/N 378135 was on hold pending S/T written review report for NOx RECLAIM concentration limits for refining pots
148336	received 09/11/1986 P/O D13487 issued 12/28/1989

**PROCESS DESCRIPTION**

Quemetco, Inc. recycles spent lead acid batteries to recover lead metal. Metallic lead is the desired product in this operation. A waste material, lead depleted slag, is shipped offsite for proper disposal. The waste slag by-product consists mainly of metal oxides and sulfates, and silica sand which may occur in this material as metal silicates. The metals present in the waste slag are expected to be mostly unrecoverable lead, calcium, iron, sodium, and trace heavy metals. The waste slag may also contain various alkaline earth metals.

In this operation, lead acid batteries are broken into fragments and the liquid sulfuric acid is washed and/or partially neutralized. The solid fragments include process material consisting of lead, rubber, and plastic. The bulk of the plastic is separated and washed, and sold to an external buyer. The remainder of feed material are mixed along with other additives consisting mainly of

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calcined carbon coke, lime, iron, borax, and/or silica sand. The shredded and treated raw feed material is stored in piles to drain as much liquid out of the feed piles as possible, and then a skip loader is used to charge buckets of this material to a rotary kiln hopper. Most of the moisture is removed in the rotary kiln and the dehydrated feed mix is charged to a reverberatory furnace. The raw mixture is smelted in this furnace and two streams of molten material are produced. The first stream, lead metal, is tapped from the reverberatory furnace and poured into large molds. The second stream, molten slag, is continuously charged to an adjacent electric resistance heated slag reduction furnace.

The reverberatory furnace operates at high temperatures of about 2400 degrees F. Molten slag floats on top of the denser liquid lead metal. The slag layer insulates the molten lead from further oxidation. The reducing agents chemically react with the slag material and reduce the lead content to metallic lead, which sinks to the bottom of the slag layers. Due to the high temperature, long residence time, and oxidizing atmosphere in the reverberatory furnace chamber, most of the organic gases produced in the reverberatory furnace are destroyed. However, both the reverberatory furnace and rotary dryer emit ROG and CO with the majority of these contaminants coming from the rotary dryer. The rotary dryer is direct fired and is not designed to heat the feed to high temperatures. A regenerative thermal oxidizer, in line between the rotary dryer baghouse and the WESP system is used to control ROG, CO, and toxic organic compounds emitted by the rotary dryer furnace.

Raw lead metal from the reverberatory and slag reduction furnaces, previously cast into lead blocks, is subsequently charged to refining pot furnaces. The lead is re-melted and mixed with various reagents to remove impurities and to adjust alloy composition. Reagents include sodium nitrate, elemental sulfur, sodium hydroxide, antimony, arsenic, calcium metal, sodium metal, red phosphorus, and petroleum coke. The chemical fumes and gases produced in the refining process are vented to an air pollution control baghouse, which filters the emissions existing as particulates. The exhaust outlet of this baghouse is vented to the WESP.

The pot furnaces are indirectly fired with natural gas. Previously, each burner compartment had its own dedicated stack. Subsequent to the WESP installation, Permits to Construct were issued to permit the individual burner stacks to be manifolded into one common stack served by a NOx CEMS, for Rule 2012 compliance, and to vent this common stack into the WESP intake manifold. This project is expected to be completed sometime in July, 2011, as soon as the City of Industry approves this project.

**PROPOSED PROCESS CHANGES**

Quemetco is proposing to replace the existing refinery baghouse with a new refinery baghouse. The new baghouse is different in that it is made by a different manufacturer and the total filter area is approximately one half of the previous filter area. This raises the air to cloth ratio from approximately 2:1 to 4:1. In some cases, this may result in a slightly lowered overall control

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efficiency. However, this operation has a very high inlet grain loading and the baghouse is also vented directly to the WESP which has been previously tested and determined to have a control efficiency for lead of approximately 98 percent by itself. Therefore, no compliance problems are expected.

**EVALUATION/DISCUSSION/RECOMMENDATION**

The WESP has been previously tested extensively to demonstrate its level of control for lead emissions. The previous baghouse has also demonstrated compliance through testing for Rule 1420 and the lead NESHAP. The lead refining operation has been previously evaluated and found to be in compliance with all applicable rules and regulations. A new evaluation is not required at this time.

Both baghouses, new and old, use PTFE membrane filter bags. Therefore, the overall lead control efficiency is expected to be in compliance with Rule 1420 requirements. Additional testing for Rule 1420 98 % control efficiency is not recommended at this time for the proposed baghouse.

The only recommended changes are the addition of permit conditions requiring source tests at the WESP outlet to verify compliance with the lead NESHAP, 40CFR63 Subpart X, and Rule 1420.1, once the new baghouse is operational.

**RECOMMENDATION**

**APPLICATION NO. 518049**

Approve Title V Facility Permit minor revision.

**APPLICATION NOS. 518048, 524239**

Approve revisions to section H of the Facility Permit as indicated below:

**CHANGES ARE IN BOLD AND HIGHLIGHTED**

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1. Modify device descriptions as follows

APPLICATION NO. 518048

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
<b>Process 1: SECONDARY LEAD SMELTING</b>					
<b>System 5: LEAD METAL REFINING SYSTEM</b>					
<b>BAGHOUSE, WITH 605 BAGS, EACH 5.875 INCH DIAMETER X 8 FEET LONG, PTFE MEMBRANE, DONALDSON TORIT, MODEL 5X121FTP8, WITH A 200 HP BLOWER AND A BROKEN BAG DETECTOR, PULSE JET CLEANED, 7444 SQ.FT. A/N 518048 Draft</b>	C21	D16 D17 D18 D19 D20 S24 D99 D100 B138		<b>LEAD: (10) [40CFR 63 Subpart X, #02, 6-23-2003]; PM: (9) [RULE 404, 2-7-1986]</b>	C6.3, D12.1, D12.5, D12.9, <b>D182.10</b> D381.1, E102.1, H116.2, H116.3 <b>K171.6</b>

APPLICATION NO. 524239

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
<b>Process 6: SUPPLEMENTARY PROCESS APCS</b>					
<b>System 1: WET ELECTROSTATIC PRECIPITATOR</b>					
STACK, WESP EXHAUST, WITH A 250-H.P. PRIMARY EXHAUST BLOWER AND A 250-H.P. STANDBY EXHAUST BLOWER, HEIGHT: 70 FT ; DIAMETER: 6 FT 8 IN <b>A/N: 524239 Draft</b>	S159	C142 C146 C150 C154 C158			A63.6, D182.4, D182.5, D182.6, D182.7, <b>D182.10</b> D323.1, E448.1, E448.2, E448.4 <b>K171.6</b>

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**2. Add New Permit Conditions**

**(NEW)**

**F52.1 This facility is subject to the applicable requirements of the following rules or regulation(s):**

**Rule 1420.1**

**A. The total facility mass lead emissions from all lead point sources shall not exceed 0.045 pounds of lead per hour.**

**B. The total facility and maximum emission rates shall be determined using the most recent source tests conducted by the facility or the District.**

**[RULE 1420.1, 11-5-2010]**

**(NEW)**

**D182.10 The operator shall test this equipment in accordance with the following specifications:**

- A) The test(s) shall be conducted and a written report submitted to the AQMD not later than 180 days of initial installation of the new refinery baghouse of device C21.**
- B) Triplicate source tests shall be conducted to measure the exhaust gas concentration and emission rate of total lead, in the outlet of the Wet Electrostatic Precipitator, to demonstrate compliance with 40CFR 63 Subpart X and Rule 1420.1.**
- C) The tests shall be conducted while the refining pot kettles are operated under normal operating conditions.**
- D) The source tests shall be performed by a qualified testing laboratory, and conducted in accordance with acceptable AQMD procedures.**
- E) The source tests shall be conducted by a qualified testing contractor approved for 40CFR 63 Subpart X and Rule 1420.1 testing.**
- F) Written notice shall be provided to the AQMD at least 10 days prior to testing so that an AQMD observer may be present during the tests.**
- G) Sampling facilities shall comply with the District "Guidelines For The Construction of Sampling and Testing Facilities", pursuant to Rule 217.**

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**H) Written results shall be submitted to the AQMD within 60 days after testing.**

**[RULE 1407, 7-8-1994; RULE 1420, 9-11-1992; RULE 1420.1, 11-5-2011; 40CFR 63 Subpart X, 6-23-2003]**

**[Devices subject to this condition : S159]**

**(NEW)**

**K171.6 The operator shall provide to the District the following items:**

- A) Two (2) copies of the test plan shall be submitted to the AQMD Refinery and Waste Management Permitting Unit, Engineering and Compliance, not less than 60 calendar days prior to the initial test date and shall be approved by the AQMD before the tests commence. The plan shall include the proposed operating conditions of the equipment during each test run.**
- B) The total amount, in tons, of all materials charged to the refining pot furnaces during each test run shall be recorded. The measuring period for determining the process weight of throughputs shall include the period during which the test run occurred. This requirement shall apply to each test run.**
- C) Parametric data for the Wet Electrostatic Precipitator (WESP) during each test run including, but not limited to, the field voltage in each WESP cell, the total number of cells in operation, each WESP scrubber recirculation flow rate and each WESP scrubber pH.**
- D) A test plan shall be submitted for District approval, and it shall include the following:**
- 1. The identity of the testing laboratory.**
  - 2. A statement from the testing laboratory certifying it meets the criteria in District Rule 304 (k).**
  - 3. A list of contaminants to be tested.**
  - 4. Testing procedures for each contaminant and a description of all sampling and analytical procedures to be used.**
  - 5. Location of points of sampling.**
  - 6. Quality assurance measures.**
  - 7. Experience in testing procedures.**
  - 8. Date(s) and time(s) of commencement of the test(s).**

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- E) The source tests shall be completed and a final report submitted to the AQMD Refinery and Waste Management Permitting Unit, Engineering and Compliance, not later than 180 days after construction of the new refinery baghouse.**

**[RULE 1407, 7-8-1994; RULE 1420, 9-11-1992; RULE 1420.1, 11-5-2011; 40CFR 63 Subpart X, 6-23-2003]**

**[Devices subject to this condition : S159]**